

Title (en)  
PROJECTION ILLUMINATION METHOD, PROJECTION ILLUMINATION SYSTEM, LASER BEAM SOURCE AND BANDWIDTH NARROWING MODULE FOR A LASER BEAM SOURCE

Title (de)  
PROJEKTIONSBELICHTUNGSVERFAHREN, PROJEKTIONSBELICHTUNGSANLAGE, LASERSTRAHLUNGSQUELLE UND BANDBREITEN-EINENGUNGSMODUL FÜR EINE LASERSTRAHLUNGSQUELLE

Title (fr)  
PROCÉDÉ D'EXPOSITION PAR PROJECTION, INSTALLATION D'EXPOSITION PAR PROJECTION, SOURCE DE RAYONNEMENT LASER ET MODULE DE RÉTRÉCISSEMENT DE LARGEUR DE BANDE POUR UNE SOURCE DE RAYONNEMENT LASER

Publication  
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Application  
**EP 10703169 A 20100204**

Priority  
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• DE 102009010560 A 20090217

Abstract (en)  
[origin: WO2010094399A1] With a projection illumination method for illuminating a radiation sensitive substrate arranged in the region of a screen of a projection objective with at least one image of a pattern of a mask in the region of a surface of the projection objective, laser radiation is used with a spectral intensity distribution  $I(?)$  dependant on the circular frequency  $?$ . The laser radiation is characterized by an aberration parameter  $a$  according to: (I) and a coherence time  $t$ : according to (II). The laser radiation is introduced into an illumination system for creating an illumination radiation directed to the mask and the pattern is displayed by means of a projection objective on the substrate. The spectral intensity distribution is set in a way, such that for a line shape parameter  $at2$  the condition  $at2 = 0.3$  applies. Thus the influence of temporally varying speckles on the image creation can be reduced compared to conventional methods, without increasing the influence of chromatic aberrations on the image creation.

IPC 8 full level  
**G03F 7/20** (2006.01); **G02B 27/48** (2006.01); **H01S 3/225** (2006.01)

CPC (source: EP KR US)  
**G02B 27/48** (2013.01 - EP KR US); **G03F 7/00** (2013.01 - KR); **G03F 7/20** (2013.01 - KR); **G03F 7/70025** (2013.01 - US); **G03F 7/70041** (2013.01 - EP US); **G03F 7/70575** (2013.01 - EP US); **G03F 7/70583** (2013.01 - EP US); **H01S 3/225** (2013.01 - KR); **H01S 3/08009** (2013.01 - EP US); **H01S 3/225** (2013.01 - EP US)

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